

Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, D.C. 20554

In the Matter of )  
 ) **IB Docket 04-286**  
WRC-15 Advisory Committee )

To: The Chief, International Bureau  
Via: Office of the Secretary

**COMMENTS ON RECOMMENDATIONS APPROVED BY THE ADVISORY  
COMMITTEE FOR THE 2015 WORLD RADIOCOMMUNICATION CONFERENCE**

ARRL, the national association for Amateur Radio, formally known as the American Radio Relay League, Incorporated (ARRL), by its Chief Technology Officer and pursuant to the Public Notice DA-13-1937, released September 20, 2013 (“Public Notice”), hereby timely<sup>1</sup> and respectfully submits its comments on recommendations approved by the WRC-15 Advisory Committee at its meeting of September 19, 2013. Specifically, ARRL encourages the Commission’s support of the recommendation adopted for the 420-450 MHz frequency band under WRC-15 agenda item 1.1 (contained in Document WAC/050) and the recommendations adopted for WRC-15 agenda items 1.10 and 1.18 (contained in Documents WAC/051 and WAC/049, respectively). ARRL comments as follows:

**I. The Recommendation for 420-450 MHz Under Agenda Item 1.1 Maintains a Status Quo that Accommodates Many Users and Works Well.**

1. Document WAC/050 contains Advisory Committee recommended edits to the NTIA proposal (Document WAC/048) for the 420-450 MHz frequency band under agenda item 1.1.

ARRL notes that the proposal sections of the Documents are identical, and that the only

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<sup>1</sup> The Public Notice set a comment date of October 11, 2013. Because of the Government-wide lapse of funding, these comments are being filed no later than the business day following the day of return to normal operations, pursuant to the instructions in a separate Public Notice dated October 1, 2013, “Procedures for Filings in the Event of a Lapse in Funding”, available at <http://www.fcc.gov/DOC-323568-Procedures-for-Filings.pdf> (last accessed October 10, 2013).

differences are in the background information and reason sections. ARRL views the differences between the two documents as nominal, and encourages a timely reconciliation adopting the proposal contained in both Documents.

2. ARRL's interest in the 420-450 MHz frequency band is rooted in the secondary allocation to the amateur service throughout the United States. The allocation is reflected in the ITU Table of Allocations for 430-440 MHz, and via footnote 5.270 to the table for 420-430 MHz and 440-450 MHz. A secondary allocation to the amateur-satellite service at 435-438 MHz is made via footnote 5.282. Amateur Radio operation in this frequency range is already subject to significant constraints enacted to protect radiolocation installations and land mobile operation in cities north of Line A, near the Canadian border.<sup>2</sup> Despite these constraints, radio amateurs are able to make significant use of this band for a variety of operations, including, without limitation, analog and digital voice systems, amateur satellite operations, analog and digital television systems, and a myriad of wireless data relay systems.

3. Amateur Radio has proven a responsive and responsible sharing partner to the primary services in the 420-450 MHz frequency band.<sup>3</sup> The successful and extensive joint use of the band by radiolocation, land mobile, and amateur interests reflects a great deal of coordination by all parties and compatibility of the applications used within the various services. The *status quo* is successful, and represents a success story for spectrum management. Introduction of IMT in the 420-430 MHz segment of this band, as proposed by one administration, will most assuredly upset this status quo. While the amateur service is secondary in this frequency band, radio

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<sup>2</sup> See 47 C.F.R. §§ 97.303(b, m), 97.313(f).

<sup>3</sup> See, e.g., "New 70 cm Coordination Agreement Reached for New England", July 18, 2008, *available at* <http://www.arrl.org/news/new-70-cm-coordination-agreement-reached-for-new-england> (last accessed October 3, 2013) (reflecting coordination procedures adopted to protect radiolocation operations at Cape Cod Air Force Station).

amateurs have a vested interest in maintaining their ability to use the band. That ability exists today, despite several constraints which radio amateurs accept and skillfully accommodate. The proposal for 420-450 MHz adopted by both the WAC and NTIA maintains a *status quo* which is acceptable to all parties and should be wholeheartedly supported by the Commission.

## **II. The Recommendation for Agenda Item 1.10 Protects the Only Worldwide, Primary Amateur and Amateur-Satellite Service Allocation between 146 MHz and 47.2 GHz.**

4. Document WAC/51 reflects the consensus view of incumbent private sector users of the 22 to 26 GHz range that existing mobile-satellite service allocations are sufficient for current and planned use. Sharing with incumbent services, including the amateur and amateur-satellite services at 24-24.25 GHz,<sup>4</sup> will require technical and operational constraints that will result in spectrum being impractical for use by the MSS. Additionally, specific atmospheric propagation conditions around 24 GHz are such that telecommunication links proposed by proponents of MSS use of this band cannot be achieved.

5. In order to find the nearest worldwide, primary allocation to either the amateur service or amateur-satellite service in the ITU Table of Allocations, one must look at least 22.95 GHz upward from 24.05 GHz, and 23.854 GHz downward from 24.00 GHz. The 24 GHz allocation to the amateur service is the *only* worldwide, primary allocation to be found between 146 MHz and 47 GHz. Despite the propagation difficulties inherent at 24 GHz and noted in the proposal, Amateur Radio operators have successfully used this frequency band for terrestrial communication and for telecommand of space stations. Radio amateurs have been responsible stewards of a band that is difficult to use, and the WAC proposal of no change to the entire 22-26 GHz range is particularly applicable to the 24-24.25 GHz segment.

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<sup>4</sup> The amateur and amateur-satellite services are primary at 24-24.05 GHz. The amateur service is secondary at 24.05-24.25 GHz.

### **III. The Recommendation for Agenda Item 1.18 Achieves the Objectives of the Automotive Industry and Accommodates the *Only* Radiolocation Applications at 77.5-78 GHz for Which Compatibility with the Amateur and Amateur-Satellite Services Has Been Demonstrated to Date.**

6. Document WAC/049 reflects the efforts of private sector automotive and amateur interests to achieve an affirmative outcome on agenda item 1.18 that achieves automotive industry objectives for a continuous allocation to radiolocation from 76-81 GHz while maintaining meaningful access to the 77.5-78 GHz segment for Amateur Radio. A measurable number of radio amateurs have equipment for this allocation,<sup>5</sup> which was relocated from 75.5-76 GHz at WRC-2003.

7. Given the agreement that was reached by automotive and Amateur Radio interests during drafting of the proposal reflected in Document WAC/049, it is disappointing that the Commission has expressed reservations concerning the recommendation.<sup>6</sup> While it is difficult to address reservations that have not been enumerated in the Public Notice, ARRL will make an effort to do so here.

8. Document WAC/049 does contain, in square brackets, a placeholder for emission power limits that may need to be designated in order to protect stations in the incumbent amateur and amateur-satellite services, which are presently allocated the 77.5-78 GHz band on a primary basis, and the operations in the radio astronomy service, which is presently allocated the band on a secondary basis. This placeholder is recommended for two reasons. First, there was no

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<sup>5</sup> Most amateur operation in this band utilizes stations at high elevations utilizing antennas with narrow beamwidths. Such configurations are utilized by experimenters to achieve communication links over distances which can be substantial. See, e.g., "California Amateurs Claim New World Distance Record on 3.7 mm Band", June 18, 2013, available at <http://www.arrl.org/news/california-amateurs-claim-new-world-distance-record-on-3-7-mm-band> (last accessed October 3, 2013) (reporting communication between Commission-licensed Amateur Radio stations AD6IW and KF6KVG within the 77.5-78 GHz band over a path of 252.49 km).

<sup>6</sup> Public Notice, ¶ 2.

participation of radio astronomy interests as members of the WAC.<sup>7</sup> Despite the best efforts of the participants in the WAC discussion, only two of the three interested parties were represented, or could be, given the composition of the Committee. During discussions on the recommendation, ARRL suggested that the Committee was not competent to assess the needs of the radio astronomy service, and this suggestion was not disputed by automotive interests. The placeholder reflects a component of an eventual United States proposal on which federal interests may need to opine via NTIA, and ARRL anticipates that what, if anything, is eventually suggested by NTIA, would be handled in the reconciliation process.

9. Second, the placeholder further suggests that an emission limit may be necessary for the amateur and amateur-satellite services. Whether such a limit will be necessary depends upon the types of vehicular radar applications eventually accommodated. Thus far in the WRC-15 study cycle, *only* low-powered, automobile-borne radars have been evaluated for compatibility with the amateur and amateur-satellite services. ARRL does not dispute the results of the evaluations conducted so far, which indicate compatibility *under the conditions tested*. We note that the power utilized by radars in the evaluations is substantially less than that authorized by the FCC in other portions of the 76-81 GHz band, particularly in the 76-77 GHz segment. Importation of the existing domestic power limits at 76-77 GHz to an international standard at 77.5-78 GHz would not be appropriate, at least at this time. Such an importation has not been studied, and is ill advised given the different services with which the 77.5-78 GHz band would be shared. ARRL anticipates that any protection criteria necessary for radio astronomy operation would be sufficient to protect amateur service operation in the 77.5-78 GHz band.

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<sup>7</sup> A contractor for the National Science Foundation who has previously represented radio astronomy interests did observe the proceedings at IWG-1, but did not and could not participate due to his status as a public sector contractor.

10. We finally address the recommendation that radiolocation be “limited to on-vehicle, on-ground automotive applications.” As far as ARRL can tell, this limitation permits precisely the operation that the automotive industry proponents seek, no more and no less. It also permits precisely the operation that has been evaluated for compatibility with the amateur and amateur-satellite services, no more and no less. In fact, compatibility is probable precisely because of the reasonable assumptions that amateur stations will operate at high elevations with narrow beamwidths, and that automotive radars will operate on vehicles at low elevations. Radar operation above ground level is likely to have a much more substantial impact on incumbent amateur service stations than what has been found. Off-vehicle operation of radars, even if ground-based, has not been studied, either for impact on the incumbent services *or* for impact on the on-vehicle systems that automotive industry proponents seek to accommodate.

11. In summary, Document WAC/049 reflects an agreement among the private sector parties involved that the United States may support what automotive interests are actually seeking and what has actually been studied. To the extent any of the reservations expressed in the Public Notice are due to the constraints on radar operation included therein, they are neither supported by studies conducted to date, nor by automotive industry interests as ARRL has understood them. ARRL encourages that the FCC support the recommendation found in Document WAC/049 as adopted as a base for eventual reconciliation with an NTIA position. In the alternative, ARRL suggests that the FCC not support any position on agenda item 1.18 at this time, as conducted studies do not support a position more expansive than that contained in the recommendation.

Therefore, the foregoing considered, ARRL, the national association for Amateur Radio, encourages that the Commission support the recommendations found in Documents WAC/049, WAC/050, and WAC/051 in the development of United States positions for WRC-15.

Respectfully submitted,

**ARRL, the national association for Amateur Radio**

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